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certain of the electrochemical plants which are open to visitors, and to other points of interest in the vicinity.

Thursday evening there will be a smoker and entertainment. Friday evening a dance and reception at the Cataract House. Saturday evening will be devoted to a trip to Niagara-on-the-Lake, Youngstown and Port Niagara by boat and trolley.

The following titles of papers have been announced:

P. G. SALOM: 'A New Type of Electrolytic Cell.'

DR. GEORGE P. SCHOLL: 'Manufacture of Ferro-Alloys in the Electric Furnace.'

DR. W. D. BANCROFT: 'Electrolytic Copper Refining.'

DR. W. H. WALKER: 'Electrometallurgy of Gold.'

F. A. J. FITZGERALD: 'Some Theoretical Considerations of Resistance Furnaces.'

F. AUSTIN LIDBURY: 'On the Supposed Electrolysis of Water Vapor.'

PROFESSOR O. W. BROWN: 'Efficiency of the Nickel Plating Tank.'

CARL HAMBUECHEN: 'Electrolysis of Sodium Hydroxide, by Alternating Current.'

PROFESSOR C. F. BURGESS: 'A Practical Utilization of the Passive State of Iron.'

DR. E. F. ROEBER: 'The Present Status of the Theory of Electrolytic Dissociation.'

C. J. REED: 'Berthelot's Law of Electrochemical Action.'

Other papers are expected from Dr. J. W. Richards, David H. Browne, Dr. L. Kahlenberg, Professor C. F. Burgess, A. H. Cowles and others. One session of the meeting will be devoted to the discussion of the theory of electrolytic dissociation, which will be opened by Dr. W. D. Bancroft.

It is announced that "negotiations have now been practically completed for supplying to all members free the Transactions of the London Faraday Society (the recently formed British Electrochemical Society), which are published in the *Electrochemist and Metallurgist* issued monthly. This is to be accomplished by supplying our Transactions free to the members of the Faraday Society. There will be no increase in our annual dues on account of this free exchange, and the benefit to be de-

rived by our members is obvious. It is also evident that this new arrangement entails considerable additional expense upon our society. The continuance of this agreement will require not only the greatest economy in the administration of our funds, but also the active support of our individual members in maintaining and increasing our membership."

SCIENTIFIC NOTES AND NEWS.

THE following honorary doctorates have been conferred by the University of Heidelberg, on the occasion of the centenary of its reopening: Mathematics, M. G. Darboux, Paris; physics, Dr. R. T. Glazebrook, London; astrophysics, Sir William Huggins, London; chemistry, Professor S. Cannizzaro, Rome; mineralogy, Professor F. Fouqué, Paris; astronomy, Professor E. C. Pickering, Harvard University; zoology, Professor E. Maupas, Algiers; botany, A. Cogniaux, Nivelles.

DR. F. R. HELMERT, director of the Geodetic Institute at Potsdam, has been elected a foreign member of the Turin Academy of Sciences.

A *Festschrift* is in course of preparation to be presented to Professor J. P. Pawlow on the twenty-fifth anniversary of the beginning of his scientific work, which occurs next year. It is proposed at the same time to endow in his honor a prize for research in physiology.

A BRONZE medal is to be struck in honor of Professor Cornil, of Paris, to commemorate his work on the history of pathology and bacteriology.

PROFESSOR O. ISRAEL has been appointed curator of the Pathological Institute of the Berlin Charity Hospital.

DR. KARL SCHÖNBERG has resigned the chair of surgery at the University of Würzburg, owing to a stroke of paralysis.

DR. STUHLMAN has been appointed director of the Biological and Agricultural Institute at Amani in German East Africa.

DR. ROSANES, professor of mathematics and physics, has been elected rector of the University of Breslau.

DR. KOLTHOFF with a party of Swedish naturalists will begin this year an exploration of the northern parts of the Pacific Ocean, starting from Port Arthur.

DR. D. T. MACDOUGALL, director of the laboratories of the New York Botanical Garden, has returned from a trip to Jamaica in the interest of the garden. Dr. M. A. Howe, assistant curator, has been in Porto Rico, and Mr. George V. Nash has been in Hayti, on a similar mission.

ACCORDING to *Nature* the following American and other foreign corresponding members of the British Association have signified their intention of being present at the Southport meeting: Professor G. S. Atkinson, Cornell University; Dr. Von Bebbler, Hamburg; Dr. R. Billwiller, Zurich; Professor Ludwig Boltzmann, Vienna; M. Teisserenc de Bort, Paris; Captain Chaves, St. Miguel, Azores; Mr. W. Davis, Cordoba, Argentine; Professor G. Gilron, Louvain; M. A. Gobert, Brussels; the Comte A. de Gramont, Paris; Professor Hellman, Berlin; Professor H. Hergesell, Strassburg; Professor H. H. Hildebrandsson, Upsala; Professor Lignier, Caen; Professor C. Lombroso, Turin; Dr. T. P. Lotzy, Leyden; Mr. G. G. MacCurdy, New Haven, Conn.; Professor E. Mascart, Paris; Professor H. Mohn, Christiania; Professor Willis Moore, Washington, D. C.; Professor Simon Newcomb, Washington, D. C.; Professor L. Palazzo, Rome; Professor Paulsen, Copenhagen; Professor J. M. Pernter, Vienna; Dr. A. L. Rotch, Blue Hill Observatory, Mass.; General Rykatcheff, St. Petersburg; Professor M. Snellen, Utrecht; Professor R. H. Thurston, Cornell University; Dr. H. C. White, University of Georgia; Professor E. Zacharias, Hamburg.

WE regret to note the following deaths among foreign men of science: Dr. Emmanuel Munk, associate professor of physiology at Berlin, on August 1, at the age of fifty-one years; Dr. C. K. Hoffman, professor of zoology and comparative anatomy at Harlem, on July 28, at the age of sixty-two years; Dr. N. Bugajew, professor of mathematics at Moscow, at the age of sixty-six years; Dr. Franz

Schwackhöfer, professor of chemical technology in the school of agriculture in Vienna, on July 18, at the age of sixty-one years; Dr. Sigmund Fuchs, professor of physiology in the same school, on July 30; Professor Karl Hausknecht, of Weimar, the botanist, on July 7.

OFFICIAL statistics have been published giving the enrollment of members at the Boston meeting of the National Educational Association, which reached the remarkable total of 32,757. The distribution of members in attendance is of considerable interest, as many as 3,748, for example, going from Illinois, and the total number from the north central states reaching 14,545. Scientific men of the Atlantic seaboard object to a meeting of the American Association for the Advancement of Science or of our other national scientific societies in the central states, and members from the central states do not attend meetings held in the east in very large numbers. It seems that we have much to learn from the spirit and organization of the National Educational Association.

THE government of New Zealand will assist the Australasian Association for the Advancement of Science, which meets at Dunedin next January, in several ways. A sum of £500 will be appropriated towards the expenses of the meeting; the government printer will do all printing required by the association free of cost; railway passes will be issued to members; and any assistance that it may be in the power of the permanent departments of the government service to render to the association will be afforded.

THE International Geological Congress opened its sessions at Vienna on August 20. A large number of American geologists went abroad this summer with the intention of attending the congress.

PURSUANT to the action of the Seventh International Geographic Congress held in Berlin in 1899, the geographers and geographic societies of the United States are considering plans for the ensuing congress, which is to convene in September, 1904. It is proposed to have the principal scientific sessions in

Washington early in the month, and to have social sessions in New York, Philadelphia, Baltimore and Chicago, with a final session in conjunction with the World's Congress of Science and Arts in St. Louis. It is provisionally planned also to provide an excursion from St. Louis to Mexico, and thence to points of geographic interest in western United States and Canada. A preliminary announcement is in press and will shortly be issued to officers and members of geographic societies in all countries, and to geographers who may express interest in the congress and its work. Details have been entrusted to a committee of arrangements made up of representatives from geographic societies in all parts of the United States. The officers of the committee are: Dr. W. J. McGee (vice-president National Geographic Society), chairman; Mr. John Joy Edson (president of the Washington Loan and Trust Company), treasurer; and Dr. J. H. McCormick, secretary. The office of the committee is in Hubbard Memorial Hall, Washington, D. C., where communications may be addressed.

THE sixth annual session of the American Mining Congress will meet at Deadwood and Lead, South Dakota, beginning on September 7.

THE fourteenth annual meeting of the British Institution of Mining Engineers will be held in the University College, Nottingham, beginning on September 2.

THE ship *Terra Nova* has now sailed from Dundee to relieve the *Discovery*. The British government, which has appropriated £45,000 for the expedition, is apparently acting without the advice of the Royal Geographical Society and the Royal Society, which originally sent the expedition, assisted by a grant from the government. Mr. Balfour in the House of Commons criticized the societies for not foreseeing the difficulties into which the *Discovery* has fallen, but afterwards withdrew his criticism as far as the Royal Society is concerned. At almost the same time the *Fritschjof* sailed from Sweden for the relief of the expedition under Professor Nordenskjöld.

The Swedish parliament has appropriated \$50,000 for this purpose.

THERE will be a civil service examination on September 23 and 24 for the position of draftsman in the U. S. Geological Survey, with a salary of \$1,400 a year. The examination will consist chiefly of practical work, retouching photographs for photoengraving and pen-drawing from photographs.

P. BUDIN in his report to the Commission de Depopulation on infant mortality gives statistics, which are summarized in the *British Medical Journal*. In Paris 145 out of every 1,000 deaths are of children under a year old, and in St. Pol-sur-Mer the proportion is as high as 509 per 1,000. During the years 1896-1900 the average annual mortality of children under one year in France was 134,434; in fact the proportion of death to survivors of the same age was higher for the first year than for any other year below the 91st. The report first discusses the direct medical causes of this mortality. The three most important are infantile diarrhoea, respiratory diseases, and congenital debility. Of these, infantile diarrhoea accounts for far the greatest number of deaths. Out of every 1,000 infants dying in Paris 380 die from diarrhoea, in Rouen 510, in Dijon 584, in Troyes 682. The system of feeding is the most important factor in this result. Of 69 children dying of diarrhoea at Boulogne, 8 only were breast-fed children, 20 were bottle-fed, and to 41 solid food had been prematurely given. The diarrhoea of breast-fed children is caused by excessive and irregular feeding. Bottle-fed children are often enormously overfed, a fault which acts most injuriously in hot weather, when least food is needed. The milk given is often of bad quality, containing bacteria, adulterated, or wanting in cream. The chief cause of death amongst congenitally weak children, especially if they are undersized, is exposure to cold. The feeding of these children requires skill. If too little food is given they become cyanosed and die, if too much they succumb readily to diarrhoea. Coming next to non-medical conditions tending to increase infant

mortality, Budin states that the death-rate is abnormally high among illegitimate children and those whose lives have been insured, and also among children of working women who are obliged to entrust them to the care of others, whether paid or unpaid. On the other hand, the mother who feeds her own child at the breast may almost always expect to rear it, in the absence of special risks, such as an alcoholic tendency on the part of the mother, which of course affects the milk. The reduction of an excessive infant mortality is a question of obvious importance in a country which, like France, has a stationary or declining population; and in suggesting remedies, most of which follow directly from the causes to which the excessive mortality is assigned, Budin demands state intervention as well as more intelligent individual effort. Every mother who can do so should be induced to suckle her own child. The importance is urged of mothers bringing the children each week to a doctor to be weighed and inspected. These consultations are of the utmost benefit wherever doctors feel it their first duty to secure that all mothers shall, if possible, suckle their children. Where the mother's milk is insufficient, some sterilized milk may be supplied, but complete artificial feeding should be deferred as long as possible. Budin himself sees about 100 children weekly in this way, and during four years not one under his care has died from diarrhœa. Other suggestions are: (1) That women be not allowed to go to work for a month after delivery, compensation to be given during this time; (2) that a nursing mother be allowed to leave work twice a day to feed her child; (3) that municipalities ensure the good quality of milk sold; (4) that the manufacture and sale of long-tubed bottles be made illegal; (5) the inspection of all children not under the care of their parents; (6) the treatment in hospital of prematurely born children below a certain weight; (7) the prohibition of the insurance of infants.

UNIVERSITY AND EDUCATIONAL NEWS.

THE Lord Mayor of Liverpool has proposed that a tax be levied to cover the expenses of

the University of Liverpool, and that tuition should be made free in all departments. Should this plan be carried into effect, Liverpool would be the only university in Great Britain without tuition fees.

THE *Journal of the American Medical Association* states that all the medical schools in the country now have a four years' course, this having been adopted by three schools in 1902 and this year by the last school with a three years' course.

It is said that plans have been perfected for combining the faculties of medicine of Toronto and Trinity Universities.

THE following were recently appointed as assistants in the department of histology and embryology at Cornell University: Wm. A. Hilton, Ph.D. (Cornell); S. G. Winter, A.M. (Ohio), and Geo. W. Partridge, A.B. (Rochester).

CHARLES H. SHAW has been appointed adjunct professor of botany in the department of pharmacy of the Medico-Chirurgical College, Philadelphia.

DR. ERNST STEINITZ has been elected professor in the Technical Institute at Charlottenburg, in the room of the late Professor Hamburger.

THE Royal Commissioners for the exhibition of 1851 have made appointments to science research scholarships for the year 1903, on the recommendation of the authorities of the several universities and colleges. The scholarships are of the value of £150 a year, and are ordinarily tenable for two years (subject to a satisfactory report at the end of the first year) in any university at home or abroad. The scholars are to devote themselves exclusively to study and research in some branch of science the extension of which is important to the industries of the country. Fifteen new scholars are appointed, fifteen scholars are reappointed for a second year and six for a third year. Two of the students who are reappointed will study in the United States—Mr. G. B. Waterhouse at Columbia University and Mr. T. C. Hebb at the University of Chicago.